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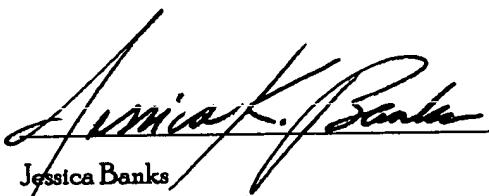
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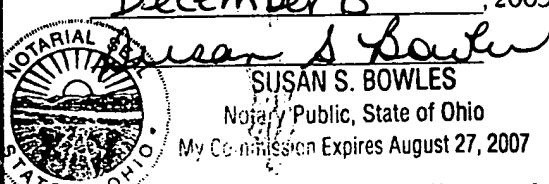
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公開実用 昭和51-149499



(1500円)

実用新案登録願

昭和51年8月22日

特許庁長官殿

1. 考案の名称

電気自動車の荷台蓋スライド

2. 考案者

実用新案登録願人と同じ

3. 実用新案

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5. 添付書類の目録

(1) 詳細書

1通

小川

(2) 図面

1通

1番

(3) 申請書

1通

5

(4) 出願書在請求書

1通

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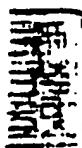
明細書

1. 考案の名称

逆転自在の開口型スパナ

2. 實用新案登録請求の範囲 (1)

一端部にナット底合用開口部の一部を形成する肉厚の頸片を、かつ他端部にこれと一体に連設し中間部が空部をなして挟持部を形成する上下二片の挟持片を有する固定頸部の挟持部に、一端部に前記頸片と対応して上記開口部の一部をなす肉厚の頸片を、かつ他端部にこれと一体に連設した枢接部を有する可動頸部の枢接部を回動自在に枢着し、この枢接部と前記挟持部の間にはねを設けて可動頸部の頸片を固定頸部の頸片に対し頸口が常に平行になるように導導すると共に、先端部の当接面が平時可動頸部の枢接部後端面および固定頸部の頸片の挟持部側内端面に当接するごとく形成した長い柄部を回動自在にその先端部を上記挟持部内に枢着し、この柄部を正方向に向した時は、両頸部がナットに作用力を与えて回転させ、また逆方向に回した時は柄部と両頸部との当接状態が

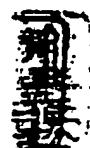


解放されると共に、可動頭部が回動して開口部を大きく開けさせてナットに作用力を与えることなく元の位置に戻ることができるよう構成した逆転自在の開口型スパナ。

() 3. 考察の詳細な説明

本考案は可動頭部を有する逆転自在の開口型スパナに關し、特に開口部をナットに係合した状態において、スパナを一定方向に回した時、開口部はナットに作用してこれを回転させて締付けまたは弛めることができ、またスパナを反対方向に回した時は、開口部は可動頭部によつて大きく開いてナットを回転させることなく、スパナを元の締付けまたは弛め作業の開始位置に戻らせて、ナットの締付けと弛め作業の能率の向上をはかつた逆転自在の新規スパナに關するものである。

従来の片口または両口スパナ等の開口型スパナは、ナットの締付け弛め作業において、ナットに嵌込んだスパナを作業可能範囲内のある角度に回した後、一応スパナをナットから外し、元の位置に戻してから再びナットに嵌め直して回すのであ



るが、ナットを完全に締付けまたは取外すまでは、この嵌合、離脱の動作を何回も繰返す必要があつて、手間がかゝり、作業能率が低い欠点があつた。この欠点を補うものとしてラテエットを応用した戻り行程ではナットを作用しない逆転自在の閉口型スパナが提供されているが、同じ作用を果す開口型スパナはかつてなかつた。

本考案はラテエット式スパナは構造を全く相異にした新規逆転自在の開口型スパナを提供するものである。

次に本考案の実施例を図面について説明する。

第1図ないし第3図に示すとく、本考案のスパナは主として固定駆部1、可動駆部2および可動柄部3の三部材から構成される。

固定駆部1はナットに嵌合する肉厚の駆片11とこれに連絡し中间をえぐり抜いて上下2片に形成した挟持片12、12より構成される。上記両挟持片12の駆片11の駆口と対向する先端部には上下対向するピン孔13が、かつ挟持片12の他端部、すなわち柄部側の一端部には同じく上下対向するピン孔

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14が各々設けられており、さらにこの孔14の上方の挿持片12の上角部にはストップピン17が固定されてある。

() 可動頭部2は上記固定頭部1の肉厚の頭片11の先端部と対応する肉厚の頭片21と、これに連設しがつその中央部にピン孔23を設けた薄肉の枢接片22を有し、この枢接片22を固定頭部1の両挿持片12の先端部間に挿入し、ヒン4をピン孔13, 23, 13に挿通しかしめることにより可動頭部2をピン4を中心として固定頭部1に対し回動自在に枢着している。

() 尚、固定頭部1の挿持片内側の頭片内壁にはばね孔15が設けられており、また、可動頭部2の枢接片22の上記ばね孔15と対向する箇所にもばね受座24が設けられており、この孔15と受座24の間にばね5を装着し、常に可動頭部2の頭片21を頭片11に対し平行になるように弾圧力を与えている。

柄部3は先端両側面32, 33が各々前記頭片11の内壁面16と枢接片22の一端面25とに当接するようにな形成した当接部31を有し、該部のやや後部には

上記ピン孔14と重合するピン孔34があり、このピン孔34の斜め上方の位置にある柄部3の側面部には、可動頭部1に設けたストップピン17が係合できるようにした凹溝35が形成されている。この柄部3は当接部31を両挟持12の後端部に挿入し、然る後、ピン6を孔14, 34, 14に通し、ピン6の開放端を固定することにより、柄部3をピン6を中心として回動自在に枢軸してある。上記柄部3の当接部31を平時は軸部1の当接面16および頭部2の当接面25と当接し、柄部3を反対方向に向した場合は、容易に当接面25から離れるよう当接部31をピン6の中心とした円弧状に形成している。尚、36は柄部3の後端に設けたスパナ掛持用孔である。

本考案は上記の様に構成されるので、使用時、第3図に示すごとく、スパナの固定頭部1と可動頭部2の間に形成した開口部6をナット7に嵌合し、柄3を矢印の方向に向かつて回すと、軸片11, 21から作用力がナット7に作用し、ナット7を回すことができる。この時、頭部1, 2は当接部31の両

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側面より、33を介して柄部3と密接し、三者が一体になつてナットに嵌合した状態でナットを回すことができる。次に第4図に示すごとく、柄部を逆方向に回動した場合には、当接部31はまずピン6を中心として頭部の外方に回動して両頭部1, 2より外れると共に、ストップピン17が凹溝35に係合し、これによつて可動頭部2はばね5の弾力に従してピン4を中心として外方へ回動して開口部2を大きく開き、ナットの対角線を容易に通過させることができて、ナットに回転トルクを与えることなくスパナを最初の締付または始め位置に戻させることができる。このようにナットと嵌合したまゝで柄部を正反方向に回すことにより、ナットの締付けおよび取外し作業を能率的に行うことができる。

第5図は本考案の構造原理を開口部2調節自在のスパナに応用した実施例を示すものである。この実施例においては、固定頭部1を頭本体1aと可動頭片1bとの二部材に分割し、それらに各々設けたウォーム18とラック19によつて可動頭片1b

を本体 1 に對し内外方向に活動自在にして開口部の大きさを調節自在に構成した点を除けば各部の構成は凡て第 1 ～ 4 図のものと同じである。

したがつて前記実施例と対応する部分は同一符号で表わしている。

本考案は上記のようにスパナをナットに嵌合したまゝ逆転可能に構造したので、ナットの締付と弛め作業の能率を向上させることができる。

4. 図面の簡単な説明

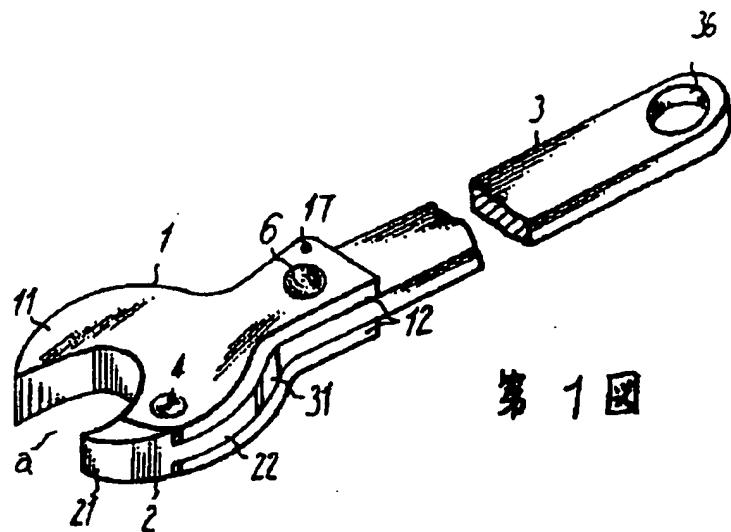
第 1 図は本考案の第一実施例を示す一部切断斜面図、第 2 図は同分解図、第 3 図～第 4 図は本考案の使用状態を示す一部切欠平面図、第 5 図は本考案の第二実施例を示す平面図である。

1 …… 固定頭部、 2 …… 可動頭部、 3 ……柄部、 11, 21 …… 頭片、 12 …… 夾持片、 22 …… 枢接片、 17 …… ストッパピン、 4, 6 …… ピン、 5 …… ばね、 31 …… 当接部、 18 …… ウォーム、 19 …… ラック。

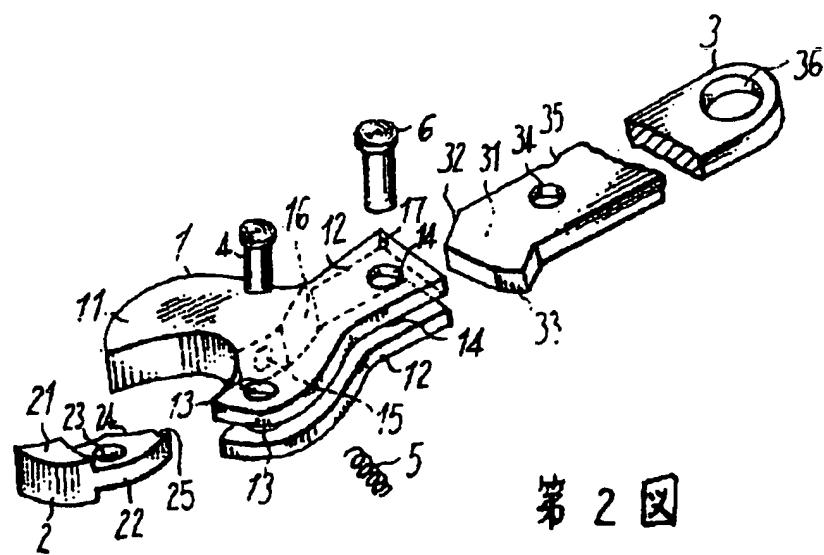
代理人弁理士 石 戸

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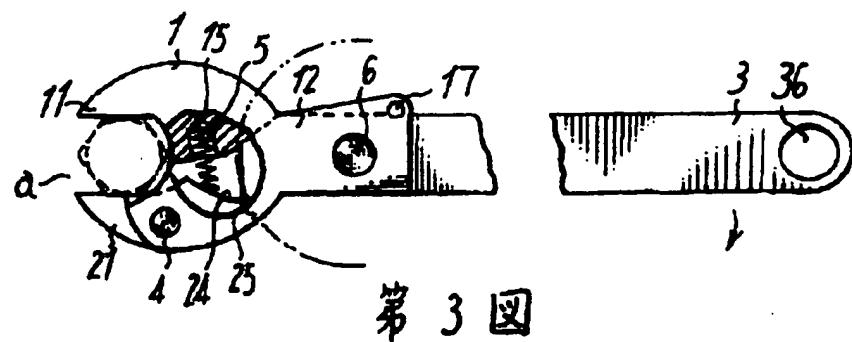


第1図

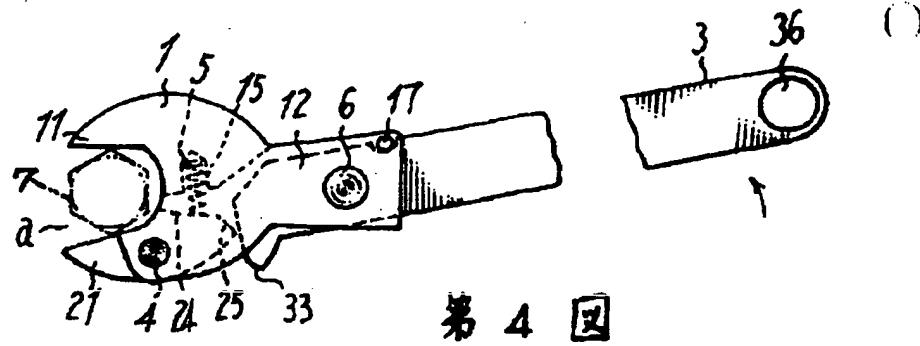


第2図

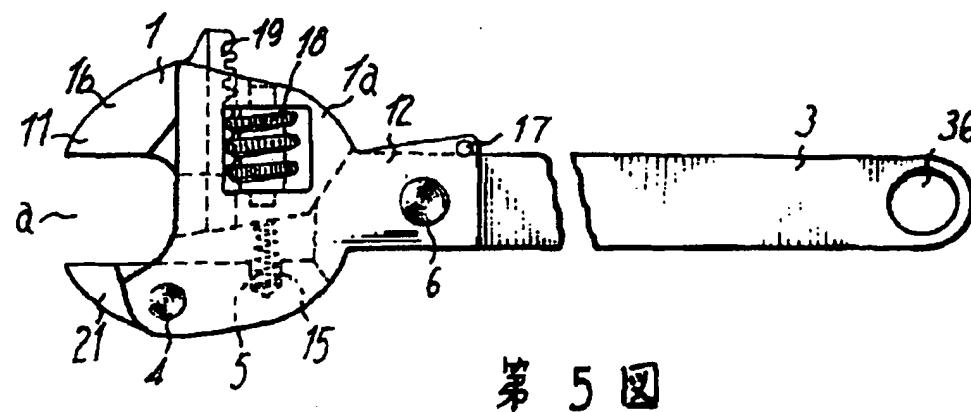
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第3図



第4図



第5図

Publication of Unexamined Utility Model Examination Showa 51[1976]-149499

[seal] Suitable
[seal] Request

[stamps]

Government of Japan. Revenue stamp. 1,000 yen.
Government of Japan. Revenue stamp. 500 yen.

(1,500 yen)
Application for Utility Model Registration

May [?] 22, 1975

TO: Commissioner of the Japan Patent Office

1. Title of the Device

A reversible open spanner

2. Creator of Device

Same as the applicant for utility model registration

3. Applicant for Utility Model Registration

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[seal] Seal of Hajime Ishido, Patent Attorney

[seal] Japan Patent Office. [illegible]

[seal] Formality check

[seal] Ogawa

5. Catalog of Attached Documents

(1) Specification	1 copy
(2) Diagrams	1 copy
(3) Power of Attorney	1 copy
(4) Request for Examination of the Application	1 copy

[illegible number]

Specification

1. Title of the Device

Reversible open spanner

2. Scope of Utility Model Registration Claims

A reversible open spanner, composed as follows: A pivot contact part of a movable jaw part that has a fleshy jaw part that forms a portion of the opening corresponding to a jaw piece on one end and a pivot contact part that is provided such that it links in one body with the former on the other end is attached on a pivot, such that it rotates freely, on the grip part of a fixed jaw part that has a fleshy jaw piece that forms a portion of the above-mentioned opening used for nut fitting on one end, and two grip pieces above and below that are linked in one body with the former and that form a grip part whose central part is hollow on the other end; and a spring is provided between this pivot contact part and the above-mentioned grip part in such a manner that it rebounds the jaw piece of the movable jaw part such that the jaw opening is always parallel to the jaw piece of the fixed jaw part, and also in a manner that the tip part of a long handle part is attached pivotally inside the above-mentioned grip part such that the handle part can rotate freely, said handle part being formed such that the direct contact surface of the tip part is usually in direct contact with the rear end surface of the pivot contact part of the movable jaw part and the side inner end surface of the grip part of the jaw piece of the fixed jaw part, and when this handle is turned in a clockwise direction, both jaws impart active force to and rotate a nut, and in addition when it is turned in the reverse direction the direct contact state of the handle part and both jaw parts is released, and in addition the movable jaw part moves circularly, causes the opening part to open widely and can return to the original position without active force being imparted to the nut.

3. Detailed Description of the Device

The present device relates to a reversible open spanner that has a movable jaw part, and relates in particular to a new reversible spanner whereby, in a state where a nut is mated to an opening part, when a spanner is turned in a fixed direction, the opening part acts on the nut to make it possible to fasten or loosen [the nut] by causing it to rotate, and in addition when the spanner is turned in the opposite direction, the opening part opens wide due to the movable jaw part, and without causing the nut to rotate, it makes the spanner return to the starting position of the original fastening or loosening operation, and thereby provides for an improvement of the efficiency of the fastening and loosening operations for the nut.

As far as conventional open spanners, like single open end spanners or double open spanners, are concerned, in the operations of fastening and loosening a nut, a spanner that is fitted to the nut is turned to an angle within the operable range, after which the spanner is for the moment released from the nut, and after it is returned to the original

position it is again refitted to the nut and turned, but it is necessary to repeat many times this operation of fitting and releasing until the nut is completely fastening or removed, and there is thus the drawback that this requires many man-hours and the operating efficiency is low. A reversible closed spanner that does not act on the nut in the return stroke, wherein a ratchet is applied, has been proposed as something to compensate for this drawback, but there was formerly no open spanner that performed the same action.

The present device provides a new reversible open spanner that is entirely distinct in its structure from ratchet type spanners.

A description is provided below of an embodiment of the device with reference to diagrams.

As shown in Figure 1 to Figure 3, the spanner of the present device is chiefly composed of three members: A fixed jaw part 1, a movable jaw part 2 and a movable handle part 3.

The fixed jaw part 1 is composed of a fleshy jaw piece 11 that fits to the nut and grip pieces 12 and 12 that are linked to the former and formed on two pieces above and below wherein the middle is hollow. A pin hole 13 that is opposed above and below to the tip parts that are opposed to the jaw opening of the jaw piece 11 of the above-mentioned two grip pieces 12, and a pin hole 14 that is similarly opposed above and below to the other end of the grip pieces 12, have been provided respectively, and moreover a stopper pin 17 has been provided in a fixed condition on the upper angle part of the grip pieces 12 above this hole 14.

The movable jaw part 2 has a fleshy jaw piece 21 that corresponds to the tip part of the fleshy jaw piece 11 of the above-mentioned fixed jaw piece 1, and a thin-walled pivot contact piece 22 that is linked to the former and provides a pin hole 23 on the center part thereof, this pivot contact piece 22 is inserted between the tips of the two grip pieces 12 of the fixed jaw part 1, and by inserting the pin 4 through the pin holes 13, 23 and 13, the movable jaw part 2 is attached pivotally such that it freely moves circularly relative to the fixed jaw part 1 with the pin 4 as the center.

A spring hole 15 has been provided on the inner wall of the jaw piece on the inside of the grip pieces of the fixed jaw part 1, and in addition a spring strike plate 24 has been provided in a position that is opposed to the above-mentioned spring hole 15 of the pivot contact piece 22 of the movable jaw part 2, a spring 5 is mounted between this hole 15 and the strike plate 24, and repressive force is imparted such that the jaw piece 21 of the movable jaw part 2 is always parallel to the jaw piece 11.

The handle part 3 has a direct contact part 31 that is formed such that both side surfaces 32 and 33 of the tip are in direct contact respectively with the inner wall surface 16 of the above-mentioned jaw piece 11 and one end surface 25 of the pivot contact piece 22, there is a pin hole 34 that overlaps with the above-mentioned pin hole 14 somewhat to the rear of said part, and a concave groove 35 has been formed, such that the stopper pin 17 provided on the moving jaw part 1 can mate, on the side surface part of the handle part 3 that is located obliquely upward of this pin hole 34. The direct contact part 31 of this handle part 3 is inserted in the rear end part of both grip pieces 12, and after so doing the pin 6 passes through the holes 14, 34 and 14, and by fixing the release end of the pin 6, the handle part 3 is attached pivotally such that it freely moves circularly with the pin 6 as the center. The direct contact part 31 of the handle part 3 is ordinarily in direct contact with the direct contact surface 16 of the jaw part 1 and the direct contact surface 25 of the

jaw part 2, and when the handle part 3 is turned in the opposite direction, the direct contact part 31 forms an arc whose center is the pin 6, such that it separates easily from the direct contact surface 25. 36 is a hole for locking and holding the spanner that is provided on the rear end of the handle part 3.

The present device is composed as described above, and when it is in use, as shown in Figure 3, when the opening A that is formed between the fixed jaw part 1 and the movable jaw part 2 of the spanner is fitted to the nut 7, and the handle 3 is turned toward the direction of the arrow, an active force acts on the nut from the jaw pieces 11 and 21, and the nut can be turned. At this time, the jaw parts 1 and 2 are in close contact with the handle part 3 through both side surfaces 32 and 33 of the direct contact part 31, and the three become one body and it is possible to turn the nut in a state where it is fitted to the nut. Next, as shown in Figure 4, when the handle part is moved circularly in the reverse direction, the direct contact part 31 first moves circularly to the outside of the jaw parts with the pin 6 as the center and separates from both jaw parts 1 and 2, and in addition the stopper pin 17 mates to the concave groove 35, and due to this the movable jaw part 2 moves circularly to the outside with the pin 4 as the center in opposition to the elastic force of the spring 5 and opens the opening part A widely, and it is possible to let the diagonal line of the nut pass easily, and it is possible to return the spanner to the initial fastening or loosening position without imparting rotational torque to the nut. By turning the handle part in clockwise and counterclockwise directions while it is fitted to the nut, it is possible to carry out the fastening or removal operations of the nut efficiently.

Figure 5 shows an embodiment that applies the structural principle of the present device to a spanner whose opening part A is adjustable. In this embodiment, the fixed jaw part 1 is divided into two members, a jaw main body 1a and a movable jaw piece 1b, and owing to a worm 18 and a rack 19 that are provided for these respectively the moveable jaw piece 1b abrades freely in the inner and outer directions relative to the main body 1a, and the size of the opening part is adjustable. Other than being configured in this way, the composition of each part is the same as what is shown in Figure 1 to Figure 4. Therefore, the parts that correspond to above-mentioned embodiment are expressed by the same numbers and letters of the key.

As noted above, the present device involves a structure whereby the spanner is reversible while it is fitted to a nut, and this can raise the efficiency of the fastening and loosening operations for the nut.

4. Brief Description of the Diagrams

Figure 1 is an oblique view with one part cut out that shows the first embodiment of the present device. Figure 2 is an exploded view of the same. Figure 3 to Figure 4 are plans with one part removed that show the state of use of the present device. Figure 5 is a plan that shows the second embodiment of the present device.

- 1... Fixed jaw part
- 2... Movable jaw part
- 3... Handle part
- 11, 21... Jaw piece
- 12... Grip piece
- 22... Pivot contact piece
- 17... Stopper pin

- 4, 6... Pin
- 5... Spring
- 31... Direct contact part
- 18... Worm
- 19... Rack

Agent Hajime Ishido, Patent Attorney

Figure 1

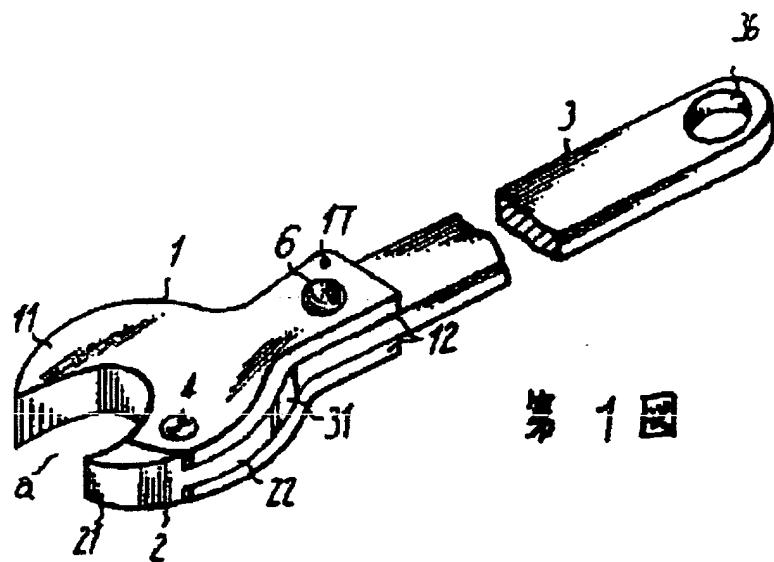


Figure 2

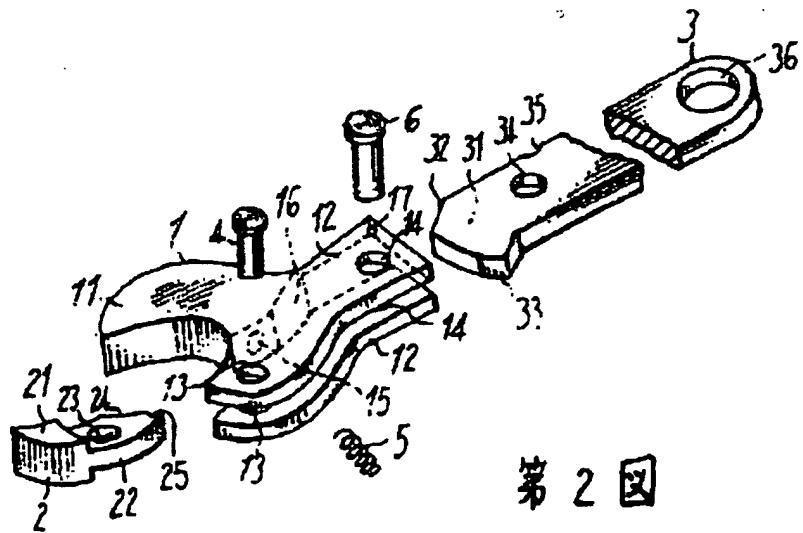


Figure 3

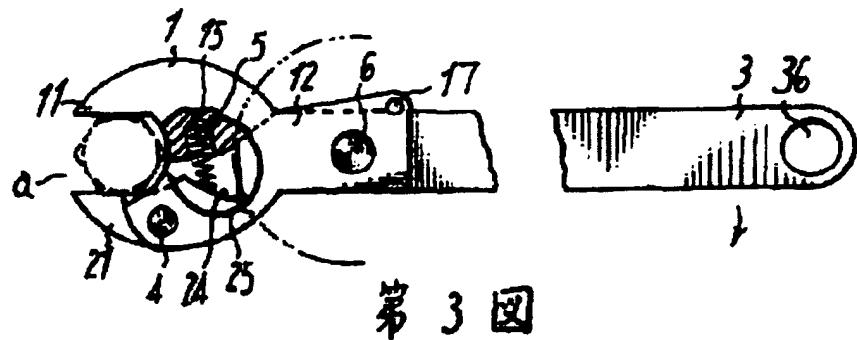


Figure 4

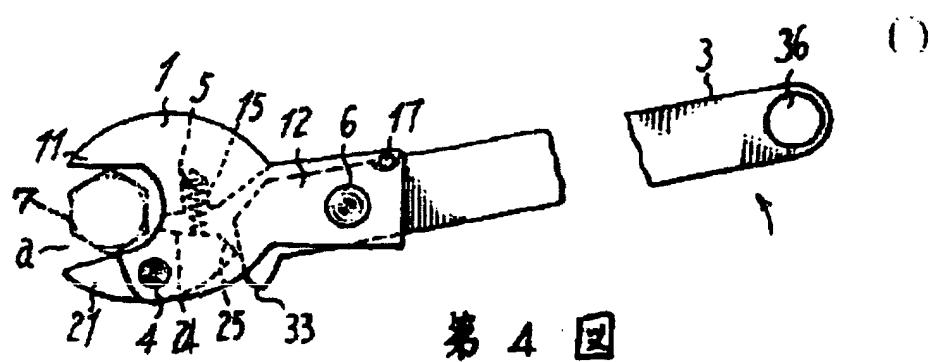
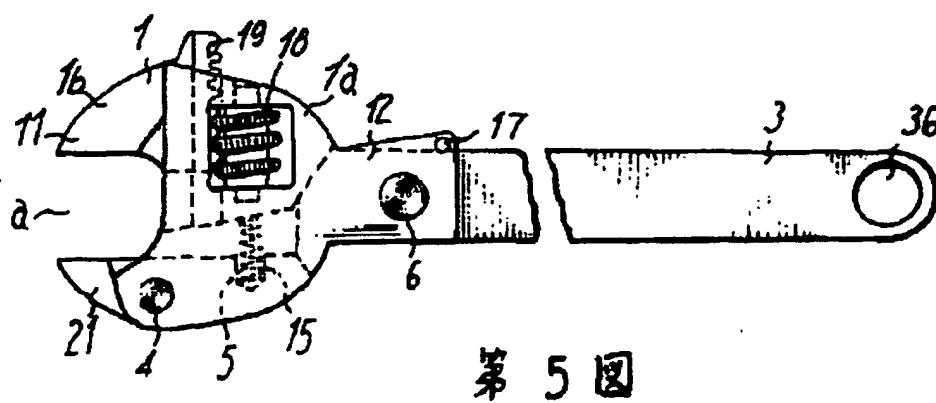


Figure 5



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